

A new species and additional records of Mecoptera from Southern Rhodesia.

by

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During recent collecting in the Eastern Districts of Southern Rhodesia two species of the genus *Bittacus* Latreille have been taken. One species (*B. vumbanus*) is new to science and of the other (*B. solitarius* Tjeder) the males have been collected for the first time. The capture of these two species in Southern Rhodesia increases the number of *Bittacus*-species known from the country to five, with the occurrence of a sixth (*B. testaceus* Klug) requiring confirmation. The species known with certainty to occur here are: *Bittacus weelei* Esb.-Pet., *B. armatus* Tjeder, *B. solitarius* Tjeder, *B. woodi* Smithers and *B. vumbanus* spec. nov.

The specimens on which the descriptions given below are based are preserved in alcohol; the figures, except for that of the fore wing of *B. vumbanus*, have been drawn from material lightly treated with cold 10% potassium hydroxide.

Bittacus solitarius Tjeder.

DESCRIPTION OF MALE. Length of body about 21 mm; length of fore wing 21 mm; length of hind wing 19 mm. The colour of the male is, in general, similar to that of the female (described in Tjeder, 1956, p. 363). Head, thorax and abdomen ferruginous. Tips of the femora and tibiae and the antennae beyond the third flagellar segment dark, almost black; first and second segments of tarsi dark with blackish tips; remaining segments almost entirely very dark brown, almost black. The wings are tinged with pale brown, the colouring being intensified at and around the pterostigma; the form of the pterostigma differs a little in one specimen (from Christmas Pass) from that illustrated by Tjeder (1956, fig. 20), but pterostigmal and venational features are liable to vary in the Bittacidae. Second and third abdominal segments each carry a few strong, dark lateral setae. Eighth tergite with a very narrow antecosta, black in the dorsal part, paling laterally; posterior margin of the eighth tergite medially emarginate (fig. 6). Eighth sternite as long as eighth tergite, broader at the posterior margin than at the anterior margin. Epiandrium (figs. 5 and 6) very long, about twice as long as the

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gnocoxites, the two arms fairly strongly divergent and each of more or less even width throughout its length, tapering a little towards the apex. Each arm carries a strong ventrally- and inwardly-directed tooth, visible in lateral view; just distad of the tooth the inner, concave surface of the arm carries a fold forming a small pouch. At the base of the epiandrial tooth is a small, weakly developed ridge which carries some fairly strong setae. Each arm carries on the inner side of the apex, two or three small, stout, black spines. The ninth sternite (fig. 5) is narrow, a little broader laterally than ventrally, narrowing a little towards the upper lateral margin; upper posterior angle strongly setose. Penis short, with a short penisfilum. Supra-anale narrowing apically; subanale apically narrow with tip bent strongly downwards and carrying long hairs. Cerci fairly long, broad-based, narrowing then broadening in the mid-region before narrowing towards the apex (fig. 5).

MATERIAL EXAMINED. **Southern Rhodesia:** 1 ♀, 1 ♂, Inyanga, 30.xii.1958 (C. N. Smithers); 3 ♀ ♀, 1 ♂, Umtali, Christmas Pass, 27.xii.1958 (C. E. Taylor and C. N. Smithers).

DISCUSSION. This species was previously known only from a single female collected in "Caffraria". The present specimens thus extend the known range of the species considerably (assuming "Caffraria" to be at least somewhere near the area at present understood by that name) and permit a description of the male to be given.

The study of the structure of the male confirms the relationship of this species to *B. brincki* Tjeder and *B. armatus*.

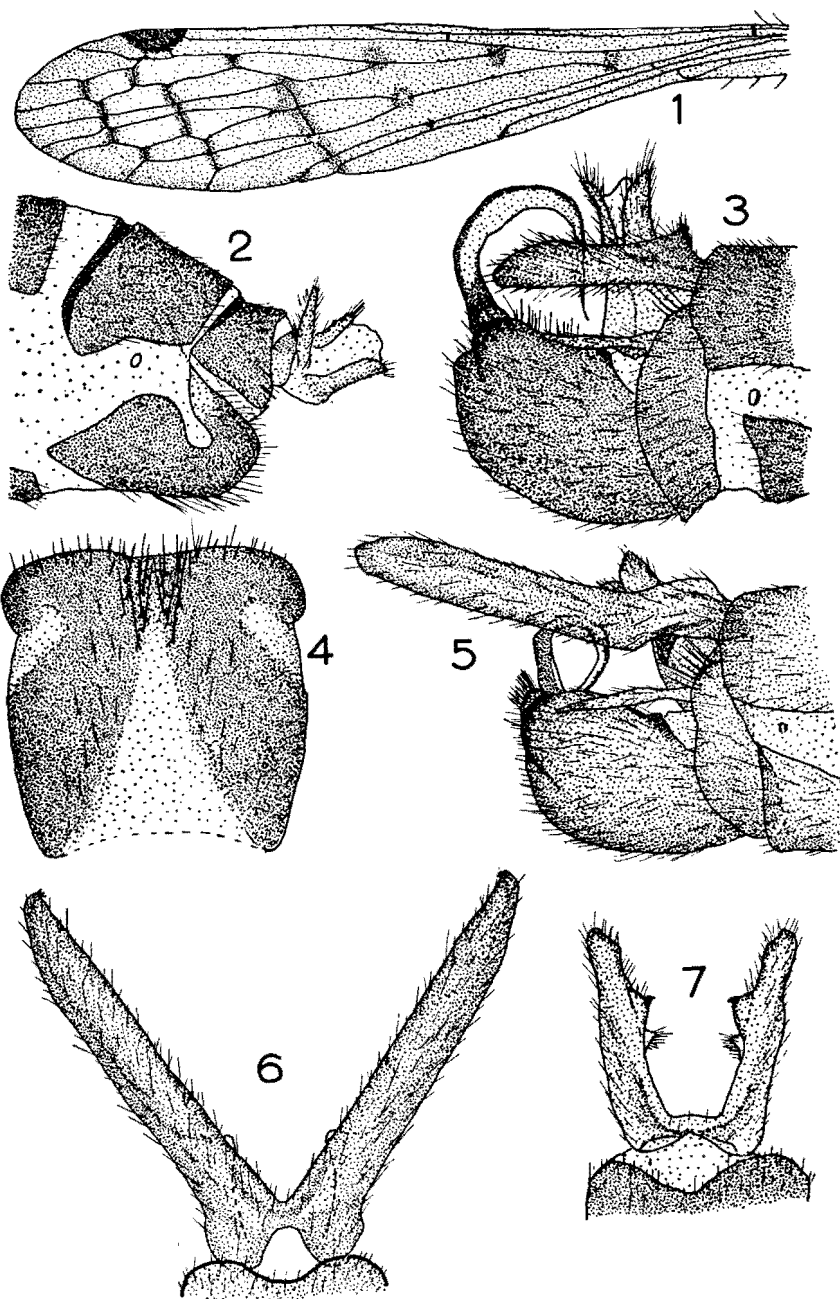
This species is an inhabitant of grassy slopes and grassy areas in open bush.

***Bittacus vumbanus* spec. nov.**

DESCRIPTION OF MALE. *Coloration.* Head yellowish brown, a little paler in front below the eyes; rostrum brownish. Eyes black. Ocellar area black. Antenna with scape, pedicel and first two flagellar segments yellowish brown, beyond which the flagellum becomes progressively darker until almost black at the sixth segment. Thorax yellowish brown; mesothorax darker above, especially anteriorly and on the lateral lobes; a pale, median longitudinal band runs between the darker lateral lobes. The yellowish brown pleura carry several black spots as follows: 1. on the mesothorax a conspicuous black spot near the hind margin; 2. a small, elongated spot near the base of

EXPLANATIONS OF FIGURES.

Figures 1-4, 7. *Bittacus vumbanus* spec. nov.: 1. Fore wing. 2. Apex of female abdomen, lateral view. 3. Apex of male abdomen, lateral view. 4. Subgenitale, ventral view. 7. Epiandrium, dorsal view. Figs. 5-6. *Bittacus solitarius* Tjeder: 5. Apex of male abdomen, lateral view. 6. Epiandrium, dorsal view.



the coxae on the anterior aspect on the meso- and metathorax; 3. a small, round spot on the most ventral point of the mesothoracic pleuron and an elongated spot in a similar position on the metathorax; 4. on the metathorax, two elongated spots adjacent to the base of the abdomen. Legs yellowish brown at base, becoming progressively darker; tibiae brown with darker tips; tarsal segments progressively darker, distal segments dark brown. A small black spot occurs at the proximal ends of the femora on the ventral side. Wings tinted pale brown with certain veins bordered by a darker tint as in figure 1; pterostigma and adjacent membrane dark brown; veins generally dark brown. Abdomen with first five tergites yellowish brown, the fifth a little darker than the first four; the third, fourth and fifth each with a dark antecosta; sixth tergite brown with a thin black antecosta; seventh and eighth tergites very dark brown, almost black. Sternites coloured as the tergites of their segments. Dorsal terminal structures brown; ninth sternite and gonocoxites similar in colour to seventh and eighth tergites.

Morphology. Length of fore wings 18—20 mm; length of hind wings 16—18 mm. Ocelli prominent. Eyes large. Basal margins of wings with several stout bristles. Second and third segments of abdomen each with a few strong lateral bristles. Eighth tergite with an emarginate posterior margin. Eighth sternite shorter than eighth tergite with the posterior margin straight, but the anterior margin slightly sinuate. Epiandrium (figs. 3 and 7) about as long as the gonocoxites, stout, with a broad-based, inwardly- and ventrally-directed tooth about one third of the distance from the apex of each arm; adjacent to the base of the tooth lies a rounded tubercle carrying several setae. Ninth sternite (fig. 3) very narrow ventrally, broad laterally with a setose upper angle. Gonocoxites of moderate size, the ventral margin rounded in lateral view. Stylus, seen from behind, with a broad base and tapering to a bluntly rounded apex, hairy except near apex. Penis moderately long with a short penisfilum. Supra-anale long and fairly broad; subanale narrower (in lateral view) with a slightly bent tip. Cerci long, broad in the middle, tapering towards apex.

DESCRIPTION OF FEMALE. *Coloration.* Generally similar in colour to male, but fifth tergite coloured as first four tergites; ninth tergite very dark brown, almost black, paler towards posterior margin on the dorsal side; tenth tergite dark brown. Sternites coloured as the tergites of their segments. Subgenitale (figs. 2 and 4) very dark brown with a pale median triangular area and pale areas at the lateral emarginations of the heavily sclerotized body of the subgenitale.

Morphology. Generally as in male. Eighth tergite with strong antecosta and broader at the anterior margin than at the posterior margin. Ninth tergite short, with a narrow antecosta sclerotized only in the dorsal region. Tenth tergite very short medially, longer laterally. Supra-anale and subanale shorter than in the male, gently rounded at apex. Subgenitale (figs. 2 and 4) a little narrower at the anterior margin than at the posterior margin; heavily

sclerotized, except for a basal median triangular area; subgenitale laterally emarginate on either side at the level of the distal apex of the lightly sclerotized area; distal part with strong hairs. Cerci long (fig. 2). Length of fore wings 17—19 mm.; length of hind wings 15—17 mm.

The coloration and morphological features of the paratypes agree well with those of the holotype and allotype; there is a little variation in the fore and hind wing measurements.

MATERIAL EXAMINED. **Southern Rhodesia:** 8 ♂♂, 9 ♀♀ Vumba Mountains, near Umtali, 21.xii.1958, (A. S. and C. N. Smithers).

The holotype (♂), allotype (♀), 1 ♂ and 2 ♀-paratypes will be retained in the author's collection. One paratype of each sex will be deposited in the collections of the following Museums and individuals: Congo Museum, Tervuren; United States National Museum, Washington; British Museum (Natural History), London; National Museum, Bulawayo; Dr. Bo Tjeder, Falun; Professor G. W. Byers, Lawrence, Kansas.

DISCUSSION. This species has some resemblances to *B. nebulosus* Klug in the patterning of the wings and in the form of the subgenitale, but is much smaller and differs in details of the structure of the apex of the abdomen. *B. selysi* Esb.-Pet. and *B. peterseni* Kimmins also approach *B. vumbanus* in wing pattern but can be recognised on characters of the apex of the abdomen. A striking feature of the present species is the dark colour of the pre-apical abdominal segments.

B. vumbanus is a species of the indigenous forest, being found on low herbage, in damp situations, alongside streams and in glades carpeted with Selaginella. Specimens are very difficult to see once they have been disturbed into flight in the dappled pattern of sun and shade in the forest. So far, this species has been taken only in the forests of the Vumba Mountains.

SUMMARY.

Bittacus vumbanus spec. nov. is described from the forests of the Vumba Mountains, Southern Rhodesia. A description is given of the hitherto unknown male of *Bittacus solitarius* Tjeder from Southern Rhodesian material; the known range of the latter species is considerably extended.

ACKNOWLEDGEMENT.

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REFERENCE.

TJEDER, B., 1956. *S. Afr. Animal Life* 3: 344-90, 108 figs. Uppsala.